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CLAIMS

1. A method for providing authentication when
5 messages are sent between an electronic communication
apparatus (1) and a server (3, 41, 51, 61) according to a
synchronization protocol, **characterized in that** an
authentication method indicator (AMI) is incorporated in an
authentication protocol of the synchronization protocol,
10 wherein said AMI specifies an authentication method
according to which the authentication is executed.

2. The method according to claim 1, wherein the AMI is
incorporated in the meta command of the synchronization
15 protocol and based on the authentication capabilities of
the apparatus (1).

3. The method according to claim 1 or 2, wherein at
least one authentication capability of the electronic
20 communication apparatus is indicated in an authentication
method list of an initialization message sent to the server
(31, 41, 51, 61) for establishing a connection.

4. The method according to any of the previous
25 claims, wherein any authentication data relating to the
specified authentication method is incorporated in a data
string of the synchronization protocol.

5. The method according to any of the previous
30 claims, wherein the specified authentication method is GSM
SIM authentication.

6. The method according to any of the claims 1-4,
wherein the specified authentication method is UMTS USIM
35 authentication, which also provides server authentication.

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7. The method according to any of the claims 1-4, wherein the specified authentication method is WPKI or WIM authentication.

5 8. The method according to any of the claims 1-4, wherein the specified authentication method is SecureId or SafeWord authentication.

10 9. The method according to any of the claims 3-7, wherein the server (31, 41, 51, 61) determines the authentication capabilities of the electronic communication apparatus (1) based on the at least one authentication method listed in the authentication method list.

15 10. The method according to claim 9, wherein the server (31, 41, 51, 61) executes any necessary authentication steps according to one of the at least one authentication methods indicated in the authentication method list, and prepares and transmits a message to the
20 electronic communication apparatus (1), comprising the AMI and any authentication data relating to the specified authentication method, in the data string of the message.

25 11. The method according to claim 10, wherein the electronic communication apparatus (1) receives the message, executes any necessary authentication steps according to the authentication method indicated by the AMI to generate an expected result, and prepares and transmits a response to the server, comprising the AMI, and any
30 authentication data in the data string of the message.

35 12. The method according to any of the claims 1-6 and 9-11, wherein integrity protection is provided by utilizing CKs/IKs (cipher keys/integrity keys) generated by the electronic communication apparatus (1) and the server (31,

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41, 51, 61), respectively, when SIM/USIM authentication is executed, which CK/IK is used for generating MAC values and using a hashing function for computing a HMAC on the entire message to be sent:

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13. The method according to any of the claims 7 or 9-11, wherein integrity protection is provided in that the server generates a good integrity key, which is encrypted with the public key of the electronic communication apparatus (1), which is generated during the authentication procedure, said integrity key is sent to said apparatus (1), and utilized for generating MAC values and using a hashing function for computing a HMAC on the entire message to be sent.

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14. The method according to claim 12 or 13, wherein the MAC value is computed as per RFC2104.

15. The method according to any of the claims 12-14, wherein the method utilizes SHA-1 as the hashing function.

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16. The method according to any of the previous claims, wherein the protocol is the SyncML-DM protocol or the SyncML-DS protocol.

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17. The method according to any of the previous claims, wherein the protocol is the Obex, http, or WSP protocol.

18. An electronic communication apparatus adapted to provide authentication when messages are exchanged with a server according to a synchronization protocol, **characterized in that** the apparatus is further adapted to incorporate an authentication method indicator (AMI) in the authentication protocol of the synchronization protocol for

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indicating a specific type of authentication method,
according to which the authentication is executed.

19. The apparatus according to claim 18, wherein the
5 apparatus (1) is further adapted to send an initialization
message to the server for establishing a connection, which
message indicates the authentication capabilities of the
apparatus.

10 20. The apparatus according to claim 19, wherein the
initialization message comprises an authentication method
list having at least one authentication method listed, type
of apparatus, and/or identity of the apparatus (1).

15 21. The apparatus according to claim 18, wherein the
apparatus (1) is further adapted to determine the type of
authentication method to use from the authentication method
indicator of a message received from the server (31, 41,
51, 61).

20 22. The apparatus according to any of the claims 18-
21, wherein the apparatus (1) is further adapted to execute
any of the steps necessary according to the specified
authentication method.

25 23. The apparatus according to claim 22, wherein the
apparatus (1) is further adapted to incorporate any
authentication data in a data string of the message to be
sent according to the synchronization protocol.

30 24. The apparatus according to any of the claims 18-
23, wherein the apparatus (1) is further adapted to provide
integrity protection by utilizing an IK (integrity key) for
generating a MAC, and utilizing a hashing function for
35 computing a HMAC on the entire message.

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25. The apparatus according to claim 24, wherein the apparatus (1) is adapted to compute the MAC value as per RFC2104.

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26. The apparatus according to claim 24 or 25, wherein the apparatus (1) is further adapted to utilize SHA-1 as the hashing function.

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27. The apparatus according to any of the claims 18-26, wherein the protocol is the SyncML-DM protocol or the SyncML-DS protocol.

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28. The apparatus according to any of the claims 18-26, wherein the protocol is the Obex, http, or WSP protocol.

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29. The apparatus according to any of the claims 18-28, wherein the apparatus (1) is further adapted to utilize GSM SIM authentication as the authentication method.

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30. The apparatus according to any of the claims 18-28, wherein the apparatus (1) is adapted to utilize UMTS USIM authentication as the authentication method and provide server authentication.

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31. The method according to any of the claims 18-28, wherein apparatus (1) is further adapted to utilize SecureId, SafeWord, WPKI or WIM authentication as the authentication method.

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32. The apparatus according to any of the claims 18-31, wherein the apparatus is a pager, an electronic organizer, or a smartphone.

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33. The apparatus according to any of the claims 18-31, wherein the apparatus is a mobile telephone (1).

34. A server adapted to provide authentication when
5 messages are exchanged with an apparatus (1) according to a synchronization protocol, **characterized in that** the server (31, 41, 51, 61) is further adapted to incorporate an authentication method indicator (AMI) in the authentication
10 protocol of the synchronization protocol for indicating an authentication method, according to which the authentication is executed.

35. The server according to claim 34, wherein the server (31, 41, 51, 61) is further adapted to incorporate
15 any authentication data in a data string of the synchronization protocol.

36. The server according to claim 34 or 35, wherein the server (31, 41, 51, 61) is further adapted to determine
20 from a received initialization message the authentication capabilities of the apparatus (1) and further determine a specific authentication method to utilize therefrom.

37. The server according to claim 36, wherein the
25 server (31, 41, 51, 61) is further adapted to execute authentication according to the determined authentication method.

38. The server according to any of the claims 34-37,
30 wherein the server (31, 41, 51, 61) is further adapted to provide integrity protection by utilizing an IK (integrity key) for generating a MAC, and utilizing a hashing function for computing a HMAC.

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39. The server according to claim 38, wherein the server (31, 41, 51, 61) is adapted to derive the MAC value as per RFC2104.

5 40. The server according to claim 38 or 39, wherein the server (31, 41, 51, 61) is further adapted to utilize SHA-1 as the hashing function.

10 41. The server according to any of the claims 34-40, wherein the protocol is the SyncML-DM protocol or the SyncML-DS protocol.

15 42. The server according to any of the claims 34-41, wherein the protocol is the Obex, http, or WSP protocol.

20 43. The server according to any of the claims 34-42, wherein the server (31, 41, 51, 61) is further adapted to utilize GSM SIM authentication as the authentication method.

25 44. The server according to any of the claims 34-42, wherein the server (31, 41, 51, 61) is further adapted to utilize UMTS USIM authentication as the authentication method and provide server authentication variable to the electronic user equipment (1).

30 45. The server according to any of the claims 34-42, wherein server is further adapted to utilize SecureId, SafeWord, WPKI or WIM authentication as the authentication method.